NOVEMBER/DECEMBER 2023

GEPH14A/DEPH14A — ELECTRONIC DEVICES AND APPLICATIONS

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What do you mean by I2L logics?

2. Mention the different types of seven segment display?

3. List out the characteristics of op-amp.

4. Draw schematic symbol of op-amp 741 and mention its pin configuration.

5. Why astable multivibrator is called free running multivibrator?

6. How does PLL work?

7. Classify the transducers.

8. What is meant by electrical strain gauge?

9. Mention the advantages of digital communication.

10. What is the importance of frequency shift keying?

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SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Draw a diagram of TTL inverter and explain its operation.

Or

(b) Write a note on photo detectors.

12. (a) Draw an anti-log amplifier circuit diagram using op-amp and explain its function.

Or

(b) Describe the procedure for solving a second order differential equation. Using OP-AMP.

13. (a) Explain the working of 555 timer connected as Schmitt trigger.

Or

(b) Apply 555 timer to construct frequency divider under monostable mode and explain its functioning.

14. (a) Explain the working of piezoelectric transducer with a neat diagram.

Or

(b) Write a note on the measurement of any three non-electrical quantities.

15. (a) What is the purpose of using Pulse Time Modulation (PTM)? What are the applications of PTM?

Or

(b) Explain the working of modem.

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SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Discuss CMOS technology? How is CMOS different from PMOS and NMOS? What happens when you replace PMOS in CMOS circuit?

17. With a neat circuit diagram, explain the working of instrumentation amplifier using operational amplifier.

18. Explain PLL IC565 with a neat block diagram along with pin configuration. Write down its characteristics features.

19. Explain the principle, construction and working of thermistor with a neat diagram.

20. What do you understand by modulation and demodulation? Explain the working of pulse width modulation with a neat diagram.
